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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,784	09/22/2006	Yuriko Suzuki	296731US40PCT	4031

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EXAMINER	
WEST, JEFFREY R	

ART UNIT	PAPER NUMBER
2857	

NOTIFICATION DATE	DELIVERY MODE
04/14/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/593,784	SUZUKI ET AL.	
	Examiner	Art Unit	
	Jeffrey R. West	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-7,9-11 and 13-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-7,9-11 and 13-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 9-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 9 has been amended to specify a “computer readable storage medium for storing a program for causing a computer to realize a force feedback method, the program, when executed by a processor of the computer, causing the computer to

execute the steps of: placing a receiver at a predetermined height above a plurality of nozzles arranged on a plane…"

The specification, however, as illustrated by the technical field provided on page 1, deals with a force feedback technique for providing force to a receiver that is held by an operator over a jet of air (i.e. nozzles), specifically:

> The present invention relates to a force feedback technique for providing a force to a receiver that is held by an operator over a jet of air and the like so as to provide force feedback to the operator.

The Examiner asserts, therefore, that the disclosure indicates that a user holds the receiver over the nozzles and that there is no disclosure that supports a program that causes a computer to place a receiver over the nozzles. As such, the Examiner asserts that one having ordinary skill in the art would not recognize that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 10 and 11are rejected under 35 U.S.C. 112, first paragraph, because they incorporate the lack of written description of parent claim 9.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 9-11 and 15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 9-11 and 15 are drawn to a "computer readable storage medium". The broadest reasonable interpretation of a claim drawn to a computer readable medium covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable media, particularly when the specification is silent (see MPEP 2111.01). Because the broadest reasonable interpretation covers a signal *per se*, a rejection under 35 USC 101 is appropriate as covering non-statutory subject matter. See 351 OG 212, Feb 23 2010.

The Examiner suggests that Applicant amends the claims as follows: "computer readable storage medium" should be ---non-transitory computer readable storage medium---.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 5, 7, 9, 11, and 13-15, as may best be understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al, "Arrayed Air Jet Based Haptic Display: Implementing an Untethered Interface".

With respect to claim 1, Suzuki discloses a force feedback method comprising: placing a receiver at a predetermined height above a plurality of nozzles arranged

on a plane (page 1, column 2, lines 17-25 and Figures 1 and 2), selecting a nozzle from among a plurality of candidate nozzles arranged on the plane, the selected nozzle having a smallest distance between the selected nozzle and a center axis of a receiver (page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2), jetting a gas or a liquid from the selected nozzle upon an inclined side surface unit of the receiver to convey a force in a direction perpendicular to a direction of the jetting gas or liquid (i.e. due to the curvature of the receiver, when the air hits the curved side of the receiver, the force received inherently includes a perpendicular force) (page 1, column 2, line 17 to page 2, column 1, line 2, page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2), wherein each of the plurality of candidate nozzles is positioned on the plane in an area below an area of the receiver between an inner border of the inclined side surface unit and an outer border of the inclined side surface unit (i.e. a nozzle is independently selected when the receiver is detected to be above the nozzle. Detection above the nozzle is based on a determination that the nozzle lies within an outer border of the dome and an inner border of the receiver) (page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2), and an angle difference between a first direction from each candidate nozzle to the center axis of the receiver and a second direction of a force to be provided to the receiver is equal to or less than a predetermined value, the first direction and the second direction being perpendicular to the direction of the jetting gas or liquid (page 1, column 2, line 17 to page 2, column 1, line 2, page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2).

With respect to claim 2, Suzuki discloses further comprising the step of: positioning the inclined side surface unit is changed according to the position or the orientation of the receiver (i.e. when the receiver is moved from a current position to a new position, the position of the inclined side surface unit moves accordingly) (page 2, column 1, lines 3-17 and Figures 1 and 2).

With respect to claim 3, Suzuki discloses further comprising the step of: calculating a virtual object according to the position or the orientation of the receiver so as to display a virtual space including the virtual object based on a result of the calculation (page 1, column 1, lines 1-13 and page 2, column 1, lines 3-21).

With respect to claim 5, Suzuki discloses a force feedback apparatus comprising: jetting means for jetting a gas or a liquid from a plurality of nozzles arranged in a plane (page 1, column 2, lines 17-25 and Figures 1 and 2), receiver means including an inclined side surface for conveying a force perpendicular to a direction of the jetting gas or liquid (i.e. due to the curvature of the receiver, when the air hits the curved side of the receiver, the force received inherently includes a perpendicular force) (page 2, lines 3-17 and Figures 1 and 2), the receiver means placed at a predetermined height above the plane (page 1, column 2, lines 17-25 and Figures 1 and 2) jet control means (page 1, column 2, line 17 to page 2, column 1, line 2, and page 2, column 1, lines 3-17 and 38-48) for selecting a nozzle from among a plurality of candidate nozzles arranged on the plane and controlling the jetting means for jetting the gas or the liquid from the selected nozzle, the selected nozzle having a smallest distance between the selected nozzle and a center axis of the

receiver means (page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2), wherein each of the plurality of candidate nozzles being positioned on the plane in an area below an area of the receiver means between an inner border of the inclined side surface means and an outer border of the inclined side surface means (i.e. a nozzle is independently selected when the receiver is detected to be above the nozzle. Detection above the nozzle is based on a determination that the nozzle lies within an outer border of the dome and an inner border of the receiver) (page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2), and an angle difference between a first direction from each candidate nozzle to the center axis of the receiver means and a second direction of a force to be provided to the receiver is equal to or less than a predetermined value, the first direction and the second direction being perpendicular to the direction of the jetting gas or liquid (page 1, column 2, line 17 to page 2, column 1, line 2, page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2).

With respect to claim 7, Suzuki discloses further comprising: virtual object calculation means for calculating a virtual object in a virtual space according to the position or the orientation of the receiver means measured by the receiver measurement means and causing a virtual object display means to display the virtual space including the virtual object based on a result of the calculation (page 1, column 1, lines 1-13 and page 2, column 1, lines 3-21).

With respect to claim 9, Suzuki discloses a computer readable storage medium for storing a program for causing a computer to realize a force feedback method, the

program, when executed by a processor of the computer, causing the computer to execute the steps of (page 1, column 1, lines 1-13 and page 2, column 1, lines 3-21): placing a receiver at a predetermined height above a plurality of nozzles arranged on a plane (page 1, column 2, lines 17-25 and Figures 1 and 2), selecting a nozzle from among a plurality of candidate nozzles arranged on the plane, the selected nozzle having a smallest distance between the selected nozzle and a center axis of a receiver (page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2), jetting a gas or a liquid from the selected nozzle upon an inclined side surface unit of the receiver to convey a force in a direction perpendicular to a direction of the jetting gas or liquid (i.e. due to the curvature of the receiver, when the air hits the curved side of the receiver, the force received inherently includes a perpendicular force) (page 1, column 2, line 17 to page 2, column 1, line 2, page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2), wherein each of the plurality of candidate nozzles is positioned on the plane in an area below an area of the receiver between an inner border of the inclined side surface unit and an outer border of the inclined side surface unit (i.e. a nozzle is independently selected when the receiver is detected to be above the nozzle. Detection above the nozzle is based on a determination that the nozzle lies within an outer border of the dome and an inner border of the receiver) (page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2), and an angle difference between a first direction from each candidate nozzle to the center axis of the receiver and a second direction of a force to be provided to the receiver is equal to or less than a predetermined value, the first direction and the

second direction being perpendicular to the direction of the jetting gas or liquid (page 1, column 2, line 17 to page 2, column 1, line 2, page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2).

With respect to claim 11, Suzuki discloses the program further causing the computer to function as execute the steps of: calculating a virtual object in a virtual space according to the position or the orientation of the receiver measured by the receiver measurement unit and causing a virtual space display means to display the virtual space including the virtual object based on a result of the calculation (page 1, column 1, lines 1-13 and page 2, column 1, lines 3-21).

With respect to claim 13, Suzuki discloses a force feedback method, comprising: selecting one or more of a plurality of nozzles arranged in a plane (page 1, column 2, lines 17-25 and Figures 1 and 2); jetting a gas or a liquid from the selected one or more nozzles upon a center of a receiver to convey a force in a direction of the jetting gas or liquid (page 2, lines 3-17 and Figures 1 and 2); and jetting the gas or the liquid from the selected one or more nozzles upon an inclined side surface of the receiver to convey a force in a direction perpendicular to the direction of the jetting gas or liquid (i.e. due to the curvature of the receiver, when the air hits the curved side of the receiver, the force received inherently includes a perpendicular force) (page 1, column 2, line 17 to page 2, column 1, line 2, page 2, column 1, lines 3-17 and 38-48, and Figures 1 and 2).

With respect to claim 14, Suzuki discloses a force feedback apparatus, comprising: a plurality of nozzles arranged in a plane, each nozzle to jet a gas or a

liquid (page 1, column 2, lines 17-25 and Figures 1 and 2); a receiver including a center to convey a force in a direction of the jet gas or liquid and including an inclined side surface to convey a force perpendicular to the direction of the jet gas or liquid (i.e. due to the curvature of the receiver, when the air hits the curved side of the receiver, the force received inherently includes a perpendicular force) (page 2, lines 3-17 and Figures 1 and 2); and a controller to control one or more of the plurality nozzles to jet the gas or the liquid upon the receiver center and the receiver inclined side surface (page 2, lines 3-17 and Figures 1 and 2).

With respect to claim 15, Suzuki discloses a computer readable storage medium storing therein a program, which, when executed by a computer processor, causes the computer to execute a force feedback method (page 1, column 1, lines 1-13 and page 2, column 1, lines 3-21), comprising the steps of: selecting one or more of a plurality of nozzles arranged in a plane (page 1, column 2, lines 17-25 and Figures 1 and 2); jetting a gas or a liquid from the selected one or more nozzles upon a center of a receiver to convey a force in a direction of the jetting gas or liquid (page 2, lines 3-17 and Figures 1 and 2); and jetting the gas or the liquid from the selected one or more nozzles upon an inclined side surface of the receiver to convey a force in a direction perpendicular to the direction of the jetting gas or liquid (i.e. due to the curvature of the receiver, when the air hits the curved side of the receiver, the force received inherently includes a perpendicular force) (page 2, lines 3-17 and Figures 1 and 2)

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 6 and 10, as may best be understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. in view of JP Patent Application Publication No. 2004-157677 to Iwaki et al.

As noted above, the invention of Suzuki teaches many of the features of the claimed invention and while the invention of Suzuki does teach a force feedback method/apparatus wherein a position or an orientation of an inclined side surface unit is changed according to a position or the orientation of the receiver, Suzuki is not explicit in providing a deformation mechanism means for changing a position or an orientation of the inclined side surface means, the force feedback apparatus further comprising receiver inclined side surface control means for controlling the deformation mechanism according to the position or the orientation of the receiver means measured by a receiver measurement unit.

Iwaki teaches a multi-flexible driving mechanism and virtual reality system for receiving force caused by jets of air as part of a force feedback apparatus (0001, lines 1-4 and 0010, lines 1-9) wherein a receiver is provided with a deformation mechanism for changing a position or an orientation of the inclined side surface unit (0012, lines 1-8 and 0014, lines 1-6), the force feedback apparatus further

comprising receiver side surface unit control means for controlling the deformation mechanism according to the position or the orientation of the receiver measured by the receiver measurement unit (0023, lines 1-7, 0027, lines 1-16, and 0030, lines 1-11).

It would have been obvious to one having ordinary skill in the art to modify the invention of Suzuki to specify a deformation mechanism means for changing a position or an orientation of the inclined side surface means, the force feedback apparatus further comprising receiver inclined side surface control means for controlling the deformation mechanism according to the position or the orientation of the receiver means measured by a receiver measurement unit, as taught by Iwaki, because, as suggested by Iwaki, the combination would have improved the system of Suzuki by providing additional control and, consequently, more accurate force detection through use of a multi-flexibility drive mechanism (0023, lines 1-7, 0027, lines 1-16, 0030, lines 1-11, and 0041, lines 1-10).

Response to Arguments

10. Applicant's arguments with respect to claims 1-3, 5-7, 9-11, and 13-15 have been considered but are moot in view of the new ground(s) of rejection.

The following arguments, however, are noted:

Applicant argues:

> Amended Claim 1 recites, *inter alia,* "jetting a gas or a liquid from the selected nozzle upon an inclined side surface unit of the receiver to convey a force in a **direction perpendicular to a direction of the jetting gas or liquid" and "an angle difference between a first direction** from each candidate nozzle to the

center axis of the receiver and a **second direction** of a force to be provided to the receiver is equal to or less than a predetermined value, the **first direction and the second direction being perpendicular to the direction of the jetting gas or liquid."**

As discussed above, Suzuki does not describe "jetting a gas or a liquid.., **to convey a force in a direction perpendicular to a direction of the jetting gas or liquid,"** as recited by Claim 1, because Suzuki describes a force feedback haptic interface in which no **horizontal force is provided.** That is, when Suzuki describes that no horizontal force is provided, Suzuki describes that no "force in a direction perpendicular to the direction of the jetting gas or liquid," as recited by Claim 1, is provided.

Further, Suzuki does not describe that "an **angle difference between a first direction** from each candidate nozzle to the center axis of the receiver and a **second direction** of a force to be provided to the receiver is equal to or less than a predetermined value, the **first direction and the second direction being perpendicular to the direction of the jetting gas or liquid," as defined by Claim 1.**

After careful consideration of Applicant's arguments and a thorough re-reading of Suzuki, the Examiner maintains that Suzuki does convey a force in a "direction perpendicular to a direction of the jetting gas or liquid" and providing first and second directions of force with "the first direction and the second direction being perpendicular to the direction of the jetting gas or liquid" for the following reasons:

The Examiner first draws Applicant's attention to the instant specification which describes the inherent force vectors that result from an upward force being applied to a curved inclined side surface:

A force generated when the jet air 601 impinges on the inclined side surface unit 102 is described with reference to Fig.6.

The force generated when the jet air 601 impinges on the inclined side surface unit 102 can be obtained from change of momentum between before impinge and after impinging of the jet air. Assuming that a jet air of density p[kg/m^3], velocity of flow v [m/s], and quantity of flow Q [m^3/s] impinges on a still inclined surface as shown in Fig.6 and that the direction of flow changes by an angle θ (0 < θ < 90 degrees), and assuming that a x component of a force F [N] received by the inclined surface is F_x and a z component is F_z, the following

equations hold true. In the equations, it is assumed that the jet air is a nonviscous fluid in which static pressure is even at all inside points, and that loss of kinetic energy due to hitting of the jet air on the inclined surface and friction on the inclined surface is neglected.

$0 = -F_x + pQv * \sin\theta$

$pQv = F_z + pQv * \cos\theta$

Accordingly, F_x and F_z can be obtained in the following way.

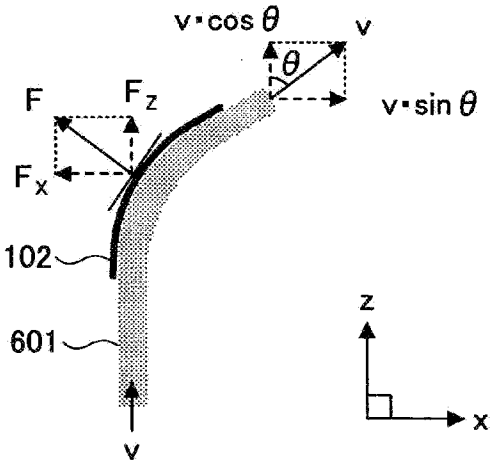
$F_x = pQv * \sin\theta$

$F_z = pQv * (1-\cos\theta)$

Therefore, by changing the flow of the air, with the inclined surface of the receiver inclined side surface unit 102, to a flow including a (lateral) component perpendicular to the jetting direction, a force F including a force F_x of the (lateral) component perpendicular to the jetting direction of the jet air 601 is generated so that the force can
be presented to the operator.

Therefore, when applying a force in a right direction to the operator 7 who holds the receiver 1, air is jetted such that the air impinges on a left side of the inclined side surface unit 102 (Fig.5B). For applying a force other than the right direction, it is only enough to jet air to a reverse side of the inclined side surface unit 102 in the same way. (instant specification, page 16, line 11 to page 17, line 15)

FIG.6



The Examiner asserts that, as can be seen by the citation and Figure provided above, a first horizontal/perpendicular force F_X is created due to a vertical force

impacting a curved inclined side of a receiver. This force is inherently generated anytime a vertical force impacts such a curved inclined side of a receiver.

Turning to Suzuki, Suzuki discloses a receiver with such curved inclined sides that is impacted by such vertical forces:

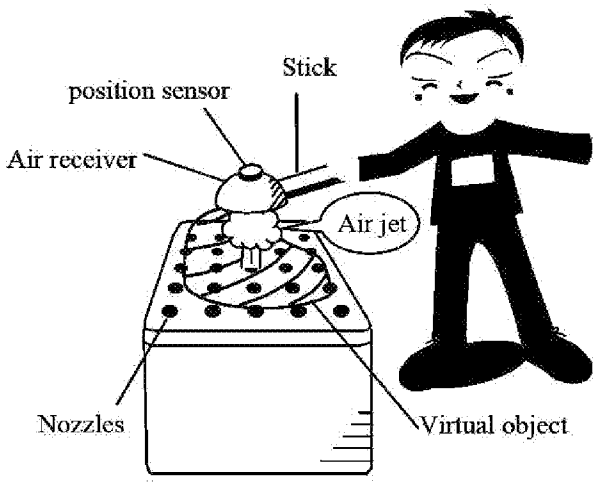


Figure. 1 Concept.

Therefore, the Examiner asserts that one having ordinary skill in the art would recognize that the receiver of Suzuki does convey a force in a “direction perpendicular to a direction of the jetting gas or liquid”.

Additionally, since the receiver of Suzuki has two opposing curved inclined sides that are both impacted by vertical forces, and since the cited portion of the instant specification discloses that such impact of a force on an opposing side of a curved inclined side creates an opposing horizontal/perpendicular force, one having ordinary skill in the art would recognize that the receiver of Suzuki does provide a

force in first and second directions of force with "the first direction and the second direction being perpendicular to the direction of the jetting gas or liquid".

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

U.S. Patent Application Publication No. 2004/0164960 to Jacobus et al. teaches a force feedback system and actuator power management.

U.S. Patent No. 6,433,771 to Yocum et al. teaches haptic device attribute control.

U.S. Patent No. 5,583,478 to Renzi teaches a virtual tactile system.

U.S. Patent No. 6,046,726 to Keyson teaches a virtual workspace with user-programmable tactile feedback.

U.S. Patent No. 5,459,382 to Jacobus et al. teaches a method and system for providing a tactile virtual reality and manipulator defining an interface device therefore.

JP Patent Application Publication No. 2001-022499 to Suzuki et al. teaches an inner force sense presenting device by wind pressure in virtual space.

Amemiya et al., Portable Tactile Feedback Interface Using Air Jet" teaches portable force feedback displays.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571)272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeffrey R. West/
Primary Examiner, Art Unit 2857

April 12, 2010